



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5 CHICAGO REGIONAL LABORATORY

536 SOUTH CLARK STREET

CHICAGO, ILLINOIS 60605

Date: 7/7/2015

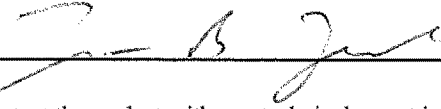
Subject: Review of Region 5 Data for Eisenbarth Well Pad - Stat Oil Company

To: R5 Emergency Response Branch
77 W Jackson Blvd
Chicago, IL 60604

From: Lawrence Zintek, Chemist
US EPA Region 5 Chicago Regional Laboratory

The data transmitted under this cover memo successfully passed CRL's data review procedures as documented in the current Quality Management Plan and applicable Standard Operating Procedures. In accordance with EPA's *Guidance on Environmental Data Verification and Data Validation* (Document EPA QA/G-8), CRL verified and validated the data but does not perform data quality assessment based on project plans.

This report was reviewed and the information provided herein accurately represents the analysis performed.

X  7/7/15

Please contact the analyst with any technical report issues, Amanda Wroble at (312)-353-0375 for sample project concerns, and Sylvia Griffin at (312)-353-9073 with data transmittal questions. Thank you.

Attached are Results for: Eisenbarth Well Pad - Stat Oil Company

Data Management Coordinator and Date Transmitted

Analyses included in this report:

TTPC



Environmental Protection Agency Region 5 Chicago Regional Laboratory

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Phone: (312) 353-8370 Fax: (312) 886-2591

R5 Emergency Response Branch
77 W Jackson Blvd
Chicago IL, 60604

Project: Eisenbarth Well Pad - Stat Oil Company
Project Number: [none]
Project Manager: James Justice

Reported:
Jul-07-15 12:59

ANALYSIS CASE NARRATIVE

General Information

The laboratory received thirteen water samples June 30, 2015 for TTPC analysis. Analysis of TTPC in water by LC/MS/MS was carried out using CRL SOP OM16, Revision 0. The samples arrived at the lab at 9.5 °C, which is above the 6 °C temperature stated in the SOP. The customer was consulted and requested the samples to be analyzed, all data is qualified estimated, "J". The samples were prepared and analyzed July 2, 2015. A holding time study was not done for TTPC, any holding time limit is arbitrary. In the absence of a customer-specified Data Quality Objectives, the Chicago Regional Laboratory defaults to the analytical Standard Operating Procedure (SOP) reporting limits. The data reported herein met the reporting limit referenced in the SOP. The analyst for these samples, Larry Zintek, can be reached at (312) 886-2925.

Sample Analysis and Results

The reporting limit was raised to three times above the concentration found in method blank B15F096-BLK1, reporting limit for this data package- 780 ng/L. All site samples were non-detect for TTPC at the SOP reporting limit of 100 ng/L except for one that was slightly above. Since there was a blank contamination issue, the reporting limit was raised to 780 ng/L which does not affect the data since TTPC was not found at appreciable amounts in any site samples. The excess sample volumes are stored refrigerated if additional analysis is required.

Quality Control

Method Blank Samples

Two method blank samples were analyzed. One of the method blank samples B15F096-BLK1, contained TTPC at 260 ng/L. This is probably due to TTPC contamination in the syringe or vial that was used to prepare and analyze the sample. The reporting limit was raised to 780 ng/L.

Laboratory Control/Laboratory Control Spike Duplicate Samples

Sample B15F096-BS1 and -BSD1 recovery was 78.2 % and 79.3% respectively, the recovery limits are 87.9-101.4%. The data is qualified estimated.

Matrix Spike/Matrix Spike Duplicate

TTPC recovery in the Matrix spike duplicate, B15F096-MSD1, was 72.7%, biased low. The RPD Limit was at the 30% limit between samples B15F096-MSD1 and -MS1. The data is qualified estimated.



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Method reporting Limit Check Samples

Method reporting limit check sample B15F096-MRL2 was biased high at 549% recovery. This is probably due to TTPC contamination in the syringe or vial that was used to prepare and analyze the sample.

All other quality control audits not mentioned were within limits.



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ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
EWP-GP24-062615	1506030-01	Water	Jun-26-15 08:20	Jun-30-15 08:54
EWP-GP23-062615	1506030-02	Water	Jun-26-15 08:50	Jun-30-15 08:54
EWP-GP26-062615	1506030-03	Water	Jun-26-15 10:00	Jun-30-15 08:54
EWP-SB31-062515	1506031-01	Water	Jun-25-15 08:30	Jun-30-15 08:54
EWP-Outfall1-062515	1506031-02	Water	Jun-25-15 10:30	Jun-30-15 08:54
EWP-Outfall2-062515	1506031-03	Water	Jun-25-15 11:15	Jun-30-15 08:54
EWP-Outfall5-062515	1506031-04	Water	Jun-25-15 11:55	Jun-30-15 08:54
EWP-SB20-062515	1506031-05	Water	Jun-25-15 15:10	Jun-30-15 08:54
EWP-SB21-062515	1506031-06	Water	Jun-25-15 15:45	Jun-30-15 08:54
EWP-SB25-062515	1506031-07	Water	Jun-25-15 16:50	Jun-30-15 08:54
EWP-SB27-062515	1506031-08	Water	Jun-25-15 16:55	Jun-30-15 08:54
EWP-GP08-062515	1506031-09	Water	Jun-25-15 17:45	Jun-30-15 08:54
EWP-Duplicate-062515	1506031-10	Water	Jun-25-15 00:00	Jun-30-15 08:54



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(Tri-n-butyl)-n-tetradecylphosphonium chloride (TTPC) Analysis US EPA Region 5 Chicago Regional Laboratory

EWP-GP24-062615 (1506030-01) Water Sampled: Jun-26-15 08:20 Received: Jun-30-15 08:54

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
TTPC	U	J		780	ng/L	1	B15F096	Jul-02-15	Jul-02-15

EWP-GP23-062615 (1506030-02) Water Sampled: Jun-26-15 08:50 Received: Jun-30-15 08:54

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
TTPC	U	J		780	ng/L	1	B15F096	Jul-02-15	Jul-02-15

EWP-GP26-062615 (1506030-03) Water Sampled: Jun-26-15 10:00 Received: Jun-30-15 08:54

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
TTPC	U	J		780	ng/L	1	B15F096	Jul-02-15	Jul-02-15

EWP-SB31-062515 (1506031-01) Water Sampled: Jun-25-15 08:30 Received: Jun-30-15 08:54

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
TTPC	U	J		780	ng/L	1	B15F096	Jul-02-15	Jul-02-15

EWP-Outfall1-062515 (1506031-02) Water Sampled: Jun-25-15 10:30 Received: Jun-30-15 08:54

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
TTPC	U	J		780	ng/L	1	B15F096	Jul-02-15	Jul-02-15

EWP-Outfall2-062515 (1506031-03) Water Sampled: Jun-25-15 11:15 Received: Jun-30-15 08:54

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
TTPC	U	J		780	ng/L	1	B15F096	Jul-02-15	Jul-02-15

EWP-Outfall5-062515 (1506031-04) Water Sampled: Jun-25-15 11:55 Received: Jun-30-15 08:54

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
TTPC	U	J		780	ng/L	1	B15F096	Jul-02-15	Jul-02-15



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Project Manager: James Justice

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(Tri-n-butyl)-n-tetradecylphosphonium chloride (TTPC) Analysis US EPA Region 5 Chicago Regional Laboratory

EWP-SB20-062515 (1506031-05) Water Sampled: Jun-25-15 15:10 Received: Jun-30-15 08:54

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
TTPC	U	J		780	ng/L	1	B15F096	Jul-02-15	Jul-02-15

EWP-SB21-062515 (1506031-06) Water Sampled: Jun-25-15 15:45 Received: Jun-30-15 08:54

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
TTPC	U	J		780	ng/L	1	B15F096	Jul-02-15	Jul-02-15

EWP-SB25-062515 (1506031-07) Water Sampled: Jun-25-15 16:50 Received: Jun-30-15 08:54

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
TTPC	U	J		780	ng/L	1	B15F096	Jul-02-15	Jul-02-15

EWP-SB27-062515 (1506031-08) Water Sampled: Jun-25-15 16:55 Received: Jun-30-15 08:54

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
TTPC	U	J		780	ng/L	1	B15F096	Jul-02-15	Jul-02-15

EWP-GP08-062515 (1506031-09) Water Sampled: Jun-25-15 17:45 Received: Jun-30-15 08:54

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
TTPC	U	J		780	ng/L	1	B15F096	Jul-02-15	Jul-02-15

EWP-Duplicate-062515 (1506031-10) Water Sampled: Jun-25-15 00:00 Received: Jun-30-15 08:54

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
TTPC	U	J		780	ng/L	1	B15F096	Jul-02-15	Jul-02-15



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(Tri-n-butyl)-n-tetradecylphosphonium chloride (TTPC) Analysis - Quality Control US EPA Region 5 Chicago Regional Laboratory

Batch B15F096 - *** DEFAULT PREP ***

Blank (B15F096-BLK1)

Prepared & Analyzed: Jul-02-15

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
TTPC	260			100	ng/L						

Blank (B15F096-BLK2)

Prepared & Analyzed: Jul-02-15

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
TTPC	U			100	ng/L						

LCS (B15F096-BS1)

Prepared & Analyzed: Jul-02-15

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
TTPC	1560			100	ng/L	2000		78.2%	87.9-101.4		

LCS Dup (B15F096-BSD1)

Prepared & Analyzed: Jul-02-15

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
TTPC	1590			100	ng/L	2000		79.3%	87.9-101.4	1.33	30

Duplicate (B15F096-DUP1)

Source: 1506031-10

Prepared & Analyzed: Jul-02-15

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
TTPC	36.1	J		780	ng/L		30.9			15.5	30

MRL Check (B15F096-MRL1)

Prepared & Analyzed: Jul-02-15

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
TTPC	103			100	ng/L	100.0		103%	86-113		

MRL Check (B15F096-MRL2)

Prepared & Analyzed: Jul-02-15

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
TTPC	549			100	ng/L	100.0		549%	86-113		



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(Tri-n-butyl)-n-tetradecylphosphonium chloride (TTPC) Analysis - Quality Control US EPA Region 5 Chicago Regional Laboratory

Batch B15F096 - *** DEFAULT PREP ***

Matrix Spike (B15F096-MS1)				Source: 1506031-10			Prepared & Analyzed: Jul-02-15				
Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	Limits	RPD	Limit
TTPC	1850			100	ng/L	2000	30.9	91.1%	87.9-101.4		

Matrix Spike Dup (B15F096-MSD1)				Source: 1506031-10			Prepared & Analyzed: Jul-02-15				
Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	Limits	RPD	Limit
TTPC	1480			100	ng/L	2000	30.9	72.7%	87.9-101.4	22.0	30



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Notes and Definitions

J The identification of the analyte is acceptable; the reported value is an estimate.
U Not Detected
NR Not Reported